

# THE JOURNAL OF THE ROYAL ANTHROPOLOGICAL INSTITUTE

An apparatus and system, preferably mounted on a service vehicle, provides synchronized application of fluid materials, either solid or liquid, to a vehicle travel surface in proportional amounts or spatially distributed proportions in response to user defined requirements and/or operation of a vehicle mounted component in response to conditions encountered in real time. A first embodiment is a vehicle mounted apparatus and system for coordinated application of a plurality of materials to a surface simultaneously and in desired proportions and/or widths automatically and/or selectively. A second embodiment includes a granular material distribution device and includes a plurality of liquid spray headers and pumping means. A third embodiment of the present invention is a vehicle mounted apparatus and system for automated coordinated application of a plurality of materials to a surface as well as automated component control such as blade blocking plate control based on sensed current surface condition information and current accurate location information as well as past operating history and predicted near term weather conditions.